

Notice of Allowability	Application No.	Applicant(s)	
	10/594,324	WRIGHT ET AL.	
	Examiner	Art Unit	
	Jennifer Doan	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 11/27/07.
2. ☒ The allowed claim(s) is/are 1-54.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.


4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


JENNIFER DOAN
PRIMARY EXAMINER

DETAILED ACTION

Response to Amendment

1. Applicant's amendment, filed on 11/27/07, has been fully considered and entered.

Reasons for Allowance

2. Claims 1-54 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to disclose or reasonably suggest all the limitations recited in claim 1. Specifically, the prior art of record fails to disclose a device for the conversion of optical radiation, comprising a multilayer structure containing one or more layers with a negative dielectric constant and one or more other layers with a positive dielectric constant designed so that the multilayer structure supports at least one surface plasmon-polariton mode, and designed so that at least one of the modes allows the optical parametric interaction of two surface plasmon-polaritons of angular frequencies ω_a and ω_b , resulting in the conversion to a frequency-upshifted surface plasmon-polariton with angular frequency $\omega_a + \delta$ and a surface plasmon-polariton, downshifted by an equal amount, with angular frequency $\omega_b - \delta$, where δ is a particular angular frequency shift or set of angular frequency shifts and one or both of the angular frequencies ω_a and ω_b is an angular frequency or set of angular frequencies present in at least one of the incident beams of input optical radiation; means for electrical

coupling into a subset of the surface plasmon-polariton modes at the angular frequencies ω_a or ω_b or the angular frequencies $\omega_a + \delta$ or $\omega_b - \delta$ of the multilayer structure; means for coupling the input optical radiation into one or more of the surface plasmon-polariton modes at the angular frequencies ω_a or ω_b or the angular frequencies $\omega_a + \delta$ or $\omega_b - \delta$ of the multilayer structure; means for coupling output optical radiation at angular frequencies $\omega_a + \delta$ or $\omega_b - \delta$ out of the multilayer structure; means for coupling output optical radiation at angular frequency ω_a and ω_b out of the multilayer structure; and means for coupling output optical radiation at angular frequency other than ω_a , ω_b , $\omega_a + \delta$ or $\omega_b - \delta$ out of the multilayer structure in combination with the other limitations of claim 1.

Claims 2-54 depend from claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-

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2346. The examiner can normally be reached on Monday to Thursday from 6:00am to 3:30pm, second Friday off.

5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JENNIFER DOAN
PRIMARY EXAMINER